AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of -1200 ps/nm or more but less than -600 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 500 cm^3 or less for accommodating said optical component,

wherein said optical component includes an optical fiber coil which is obtained by wounding an optical fiber in a coil form such that an insertion loss of said entire dispersion compensator becomes 5.9 dB or less while being accommodated in said housing.

2. (Original) A dispersion compensator according to claim 1, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leq -0.31 \times AD + 120.$$

3. (Cancelled)

4. (Original) A dispersion compensator according to claim 1, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leq -0.0033 \times AD + 1.9.$$

5. (Currently Amended) A dispersion compensator according to claim 1, wherein ~~said optical component includes an optical fiber comprising:~~ an optical fiber constituting said optical fiber coil, comprises:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

6. (Original) A dispersion compensator according to claim 5, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

7. (Previously Presented) A dispersion compensator according to claim 5, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said third cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leq a/c < 0.4$, and

$0.4 \leq b/c \leq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

8. (Currently Amended) A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of -600 ps/nm or more but less than -300 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 310 cm^3 or less for accommodating said optical component,

wherein said optical component includes an optical fiber coil which is obtained by wounding an optical fiber in a coil form such that an insertion loss of said entire dispersion compensator becomes 3.9 dB or less while being accommodated in said housing.

9. (Original) A dispersion compensator according to claim 8, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leq -0.31 \times AD + 120.$$

10. (Cancelled)

11. (Original) A dispersion compensator according to claim 8, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leq -0.0033 \times AD + 1.9.$$

12. (Currently Amended) A dispersion compensator according to claim 8, wherein ~~said optical component includes an optical fiber comprising:~~ an optical fiber constituting said optical fiber coil comprises:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

13. (Original) A dispersion compensator according to claim 12, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

14. (Previously Presented) A dispersion compensator according to claim 12, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said third cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leq a/c < 0.4$, and

$0.4 \leq b/c \leq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

15. (Currently Amended) A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of -300 ps/nm or more but less than -180 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 260 cm^3 or less for accommodating said optical component,

wherein said optical component includes an optical fiber coil which is obtained by wounding an optical fiber in a coil form such that an insertion loss of said entire dispersion compensator becomes 2.9 dB or less while being accommodated in said housing.

16. (Original) A dispersion compensator according to claim 15, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leq -0.31 \times AD + 120.$$

17. (Cancelled)

18. (Original) A dispersion compensator according to claim 15, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leq -0.0033 \times AD + 1.9.$$

19. (Currently Amended) A dispersion compensator according to claim 15, wherein ~~said optical component includes an optical fiber comprising:~~ an optical fiber constituting said optical fiber coil comprises:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

20. (Original) A dispersion compensator according to claim 19, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

21. (Previously Presented) A dispersion compensator according to claim 19, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said third cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leq a/c < 0.4$, and

$0.4 \leq b/c \leq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

22. (Currently Amended) A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of -180 ps/nm or more but less than -80 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 200 cm^3 or less for accommodating said optical component,

wherein said optical component includes an optical fiber coil which is obtained by wounding an optical fiber in a coil form such that an insertion loss of said entire dispersion compensator becomes 2.5 dB or less while being accommodated in said housing.

23. (Original) A dispersion compensator according to claim 22, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leq -0.31 \times AD + 120.$$

24. (Cancelled)

25. (Original) A dispersion compensator according to claim 22, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leq -0.0033 \times AD + 1.9.$$

26. (Currently Amended) A dispersion compensator according to claim 22, wherein ~~said optical component includes an optical fiber comprising:~~ an optical fiber constituting said optical fiber coil comprises:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

27. (Original) A dispersion compensator according to claim 26, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

28. (Previously Presented) A dispersion compensator according to claim 26, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said third cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leq a/c < 0.4$, and

$0.4 \leq b/c \leq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

29. (Currently Amended) A dispersion compensator, comprising:

an optical component having a predetermined accumulated chromatic dispersion at a wavelength of 1.55 μm; and

a housing for accommodating said optical component,

wherein said optical component includes an optical fiber coil which is obtained by wounding an optical fiber in a coil form such that the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leq -0.31 \times AD + 120$$

and such that the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leqq -0.0033 \times AD + 1.9.$$

30. (Cancelled)

31. (Currently Amended) A dispersion compensator according to claim 29, wherein ~~said optical component includes an optical fiber comprising:~~ an optical fiber constituting said optical fiber coil comprises:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

32. (Original) A dispersion compensator according to claim 31, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

33. (Previously Presented) A dispersion compensator according to claim 29, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said third cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leq a/c < 0.4$, and

$0.4 \leq b/c \leq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

34. (Previously Presented) A dispersion compensator according to claim 1, wherein said optical component has a mode field diameter of 4.5 μm or less at a wavelength of 1550 nm.

35. (Previously Presented) A dispersion compensator according to claim 8, wherein said optical component has a mode field diameter of 4.5 μm or less at a wavelength of 1550 nm.

36. (Previously Presented) A dispersion compensator according to claim 15, wherein said optical component has a mode field diameter of 4.5 μm or less at a wavelength of 1550 nm.

37. (Previously Presented) A dispersion compensator according to claim 22, wherein said optical component has a mode field diameter of 4.5 μm or less at a wavelength of 1550 nm.

38. (Previously Presented) A dispersion compensator according to claim 29, wherein said optical component has a mode field diameter of 4.5 μm or less at a wavelength of 1550 nm.